

Summary of Chapters 4, 5, 6, 7, [Duistermaat-Kolk]

Chapter 4

- (1) This chapter is THREE page long. In this chapter, the notion of derivatives of distributions is introduced. You should be knowing all the examples and results from this chapter.
- (2) You are expected to solve Problems 4.1-4.2, 4.5, 4.8

Chapter 5

- (1) In this chapter, the notion of convergence of distributions is introduced. You should be knowing all the examples and results from this chapter, except Lemma 5.4 and the proof of Theorem 5.5 that will not be asked in any exam.
- (2) You are expected to solve Problems 5.1, 5.2, 5.4, 5.11, 5.12, 5.13

Chapter 6

- (1) This chapter is on Taylor series in several variables. You are assumed to be familiar with Taylor series, not necessarily as given in the chapter 6 of the text book.

Chapter 7

- (1) For functions we know that we can restrict the domain to a subset and can define the restricted function. On the otherhand, suppose that we are given a family of functions defined on their respective domains such that whenever domains of two functions have a non-empty intersection, the corresponding functions agree on the intersection. In such a case, we can define a new function with domain which is the union of domains of all the given functions and such that this new function when restricted to domain of any of the given functions agrees with the corresponding function.
- (2) In this chapter, we discuss a similar situation as above, but for Distributions. See Theorem 7.6 for details.
- (3) Example 7.3 will not be asked in any exam.
- (4) You are expected to solve Problems 7.1, 7.2, 7.3, 7.9, 7.11

Syllabus for Mid Semester Examination

- (1) Chapters 4, 5, 7 ([Duistermaat-Kolk]). Yes, the first three chapters are NOT included for Mid Semester Examination.
- (2) Assignments 4,5